has not the mathematical ability to master the more profound calculations required for the full developement of the mechanism of the heavens. He will here find a clear and well-digested view of the methods of determining the motions and places of the sun, the moon, and the other heavenly bodies, their eclipses and occultations, the construction of astronomical tables and the measurement of time, together with some useful astronomical tables uncommonly well arranged ; so that, if he have any taste for numerical calculation, he will be abundantly supplied with good materials, and, if he should desire to predict an eclipse or to calculate an almanac, he could not readily be referred to a more satisfactory source of information. He will also find a somewhat novel and lucid "exposition of the operations of the disturbing forces in producing the perturbations of the motions of the solar system," sufficiently accurate and comprehensive, perhaps, for the ordinary purposes of instruction. A great defect of the volume consists, however, in the meagreness of its details with regard to the natural history of the heavenly bodies. A single page, illustrated by no diagrams, is all that is allotted to the physical constitution of the moon ; and in direct contradiction to the delicate observations of Schröter, without any allusion to them, this body is declared to have no atmosphere. The variable stars and nebulæ are hastily passed over in an uninteresting description, and no notice is taken of the sublime speculations to which they have led the minds of philosophers. But such defects as these do not render the work of less value for the practical purposes for which it was evidently designed, and for which it may be recommended as an excellent text-book.

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7. — *An Elementary Treatise on Optics, designed for the Use of the Cadets of the United States' Military Academy*, by William H. C. Bartlett, A. M., Professor of Natural and Experimental Philosophy in the Academy. New York : Wiley & Putnam. 1839. 8vo. pp. 231.

The science of Optics is not to be confounded with the Natural Philosophy of Light. In the latter department of science the nature of light is the especial object of investigation, and a prominent place is given to the discussion of the two theories of emission and of waves. All the phenomena of observation are carefully scrutinized in reference to their

bearing upon this subject, and compared with the results deduced from each theory by the calculus; and the calculations themselves exhaust the highest powers of transcendental mathematics. In Optics, on the contrary, the properties and phenomena of light are alone considered, without regard to hypotheses; and the results, which are mostly obtained by the usual processes of calculation, being founded upon the data of exact experiment, are absolutely true, and cannot be affected by any modifications which the hypotheses may undergo. If, therefore, the one study be the more captivating to a philosophical student, and deserve a high place in a liberal course of education, the other, to which Newton almost exclusively confined his optical researches, is probably the more healthy discipline to the mind, and far the more important to him who designs to make a practical use of his knowledge. Professor Bartlett's work is, as its title implies, strictly a treatise on Optics. The unaffected freedom from pretension, with which it is offered to the world, prepossessed us strongly in its favor upon first opening it; and we rejoice in being able to say, that we have not been disappointed by a further examination, but that the simplicity of the entrance is a fair sample of the neatness of the interior. The whole theory of optical instruments, including the laws of the reflection, refraction, and dispersion of light, and the description of the eye, occupies about two-thirds of the volume, and is presented in a highly finished form. The phenomena of absorption, internal reflection, interference, divergence, double refraction, and polarization are explained in the remainder of the work with great distinctness and precision. The mathematical formulæ are, throughout, most happily and clearly exhibited; the deductions and explanations are highly perspicuous; and, in short, the entire arrangement and execution of the treatise are excellent, worthy of the distinguished reputation of its author, and exactly adapted to the class of students for whose use it was prepared.

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8 — *Man, in his Physical Structure and Adaptations.* By Robert Mudie, author of "The Heavens," "The Four Seasons," "The British Naturalist," etc. etc. Boston: Otis, Broaders, & Company. 1838. 12mo. pp. 294.

Mr. Robert Mudie, author of "The Heavens," of "The Four Seasons," and now of "Man," — whether a man of